

manning, and other essential elements of safety. Each of these points requires to be separately and fully dealt with."

Great importance is rightly attached by the Load-line Committee to the administration of the freeboard tables. The most perfect tables that can be framed must necessarily be incomplete in many particulars, and must leave much to the discretion of those who have to use them. The mere tables only apply to existing types of vessels; and out of those existing types they can only apply to vessels of high class which are in good condition. In the administration of the tables great discretion and knowledge are necessary, in order to use them with reasonable modifications, in view of changes in the types of ships, or of improvements in ships, that the continuous progress of naval architecture is certain before long to cause. The same discretion and knowledge are necessary in dealing with vessels which, by reason of age, structural defects, more or less rapid deterioration, or of anything that may be observed in their condition, cannot safely or fairly be loaded as deeply as vessels which are in first-class condition. The great majority of the members of the Committee are of opinion that, in order to give useful and satisfactory effect to the tables, the scientific staff of the Board of Trade should be strengthened, and should be made capable of dealing with all questions of such a nature that may arise, in a manner likely to command the confidence of ship-owners and of the public. They also think it essential that this work should be done under the superintendence of a representative body, which should consist not only of officials but also of ship-owners, naval architects, seamen, and perhaps under-writers.

Sir E. J. Reed said, "The Load-line Committee, in the inquiry which they undertook, had a very difficult task to perform. The origin of that Committee was this: the Legislature having placed the obligation of stopping the overloading of ships on the Board of Trade, that Department tried to do so, but failed to succeed, their interference being resisted by ship-owners. Thereupon Mr. Chamberlain conceived the idea of forming a Committee of gentlemen for the purpose of thoroughly investigating the subject, and seeing what answers could be given to the questions which had been referred to in the paper. The best proof that the Committee had done its work with a fair measure of success was to be found in the fact that no one had that evening complained of the results at which they arrived, which would not have been the case had mistakes been committed, as ship-owners never hesitated to defend themselves. Prof. Elgar had shown how necessary it was to supplement the labours of the Committee by further knowledge and investigation touching other elements of the safety of ships at sea. He believed ship-owners came out exceedingly well in the inquiry, both in the evidence they laid before the Committee and in the manner in which they applied their knowledge and experience to the investigation; and he should feel it his duty, when he saw Mr. Chamberlain, to point out to him that nothing could have been more fair-minded, more open or thorough, than the manner in which they co-operated with the other members of the Committee in bringing about the result which had been attained."

The public are indebted to the Load-line Committee for the satisfactory manner in which they performed a most difficult task; and especially to the Chairman, Sir E. J. Reed, to whose ability and good judgment the success of their labours may very largely be attributed.

THE WANDERINGS OF PLANTS AND ANIMALS

The Wanderings of Plants and Animals from their First Home. By Victor Hehn. Edited by James Steven Stallybrass. (London: Swan Sonnenschein and Co., 1885.)

THE title of this book is somewhat misleading, since it treats only of domesticated animals and cultivated plants, and of these solely in relation to European civilisation. The subject is treated as almost entirely a philological one, the origin of the several species and varieties being deduced from a study of their names in different countries and from a critical examination of the earliest references to them in ancient writers. The author's point of view is thus clearly stated in the preface:—

"The purely scientific man will judge chiefly by the suitability of soil and climate. If he finds a plant flourishing pretty abundantly in Greece or Italy now, and knows of no climatic or geologic changes that would exclude its having flourished there 5000 years ago, he will at once pronounce it indigenous, and scout the notion of its having been imported. But now listen to the scholar, and he may tell you that Homer never mentions such a plant; that later poets speak of it in a vague way as something very choice and very holy, and always in connection with some particular deity: they may have tasted its fruit, may have seen the figure of its flowers (probably conventional) in emblematic painting or carving, but have not the faintest notion of its shape or size, whether it be a grass, a shrub, or a tree; till at last, in the time of Darius or Alexander, the plant itself emerges into clear visibility. Your inference will be that it came to Greece within historic times."

In this way he claims to have shown "that the flora of Southern Europe has been revolutionised under the hand of man; that the evergreen vegetation of Italy and Greece is not indigenous, but is mainly due to the sacred groves planted round the temples of Oriental gods and goddesses; that in this way the laurel has followed the worship of Apollo, the cypress and myrtle that of Aphrodite, the olive that of Athena, and so on." But this very wide statement seems hardly to be justified by the evidence adduced in this volume.

As a good example of our author's mode of treatment we may refer to his account of the domestic cat. This animal, he shows, was quite unknown to the Greeks and Romans of the classical age. In the *Batrachomyomachia* the mouse tells the frog that he fears above all things the hawk and the weasel, but most the weasel, because it creeps after him into his holes. In "The Wasps" of Aristophanes a domestic story begins: "Once upon a time there was a mouse and a weasel"—just as we say to children, "There was once a cat and a mouse." In the fable of the City mouse and the Country mouse as related by Horace, the latter is frightened, not by a cat, but by the barking of dogs. In the original fables of Æsop, of Babrius, and of Phædrus, the cat is never mentioned, the weasel always occupying the place the former animal

now fills in the house. No remains of cats have been found in Pompèii, though the bones of horses, dogs, and goats have been discovered, and some writers have imputed this to the superior intelligence and foresight of the former animal, which made its escape in time, whereas its absence is due to the fact that there were no cats in the city at the period of its destruction.

The cat was first domesticated in Egypt, and appears to have been introduced into Europe in the fifth or sixth century of the Christian era. It is first mentioned under its distinctive name, *Catus*, by Palladius, and somewhat later by the ecclesiastical historian, Evagrius Scholasticus. The author believes that the introduction of the cat followed the migration of the rat, *Mus rattus*, from Asia into Europe, where it seems to have been altogether unknown in classical times.

As an illustration from the vegetable kingdom we may take the discussion on the origin of the eatable chestnut. The name is traced to Asia Minor, and that it was not indigenous to Europe is shown by the fact "that neither Greeks nor Romans had an individual name for the chestnut-tree and its fruit." It is further argued that, "If the Greeks had found the chestnut-tree existing in their future country when they first arrived, they would certainly have mentioned the fruit in their legends. But we only hear of the acorns of the *drus*, the esculent oak; and the aborigines, such as the wild Arcadians in their mountains and woods, are always called *acorn-eaters*, even by the oracles. When Hesiod describes the blessings of peace and justice, the earth bringing forth fruits, the oak bearing acorns, the bees furnishing honey, and the sheep yielding its fleece—would he have forgotten to mention the chestnut, if it had then grown on the mountains, bestowing sweet fruit on mankind? And would the Latin poets, when describing the Golden Age, have limited themselves to mentioning arbutus-fruit, strawberries, cornel-berries, blackberries, and acorns? That the regions south of the Caucasus, and the northern seaboard of Asia Minor, bring forth all kinds of nuts and chestnuts in great abundance, is proved by the unanimous testimony of travellers, ancient and modern. . . . From these regions chestnuts came overland through Thrace, Macedonia, and Thessaly to Eubœa, after which island they were called Eubœan nuts at Athens."

The chief faults of this book are due to the want of any acquaintance with systematic natural history on the part of either author or editor. This has led to many errors of nomenclature and a most confusing arrangement of subjects. Beginning with a chapter on the horse, we pass on to the vine, fig, and olive, and then back to asses and mules. Then comes "stone architecture," followed by "beer" and "butter." After a number of vegetables, trees, fruits, and flowers are discussed, we come to fowls, pigeons, and other domestic birds; then more fruit-trees; then the cat and the buffalo, followed by the hop and grain-bearing plants. As illustrations of the want of some technical knowledge of natural history we have the prickly *Ruscus aculeatus*, instead of the glossy-leaved *Ruscus racemosus*, given as the Alexandrian laurel; the *cytisis* of the ancients, a shrub used extensively as fodder for cattle, and rightly identified as the *Medicago arborea*, confounded with the laburnum, an ornamental tree of a totally different character. The Virginian creeper (*Am-*

pelopsis hederacea) is confounded with another American plant, the fox-grape (*Vitis labrusca*), while the Lombardy poplar, a native of Western Asia, is said to have been brought from the Mississippi Valley.

Being evidently quite unacquainted with the discoveries of Darwin, the author greatly exaggerates the changes produced by man in the flora of Europe, considering it to offer a parallel case to that of St. Helena, where the indigenous vegetation has been almost wholly extirpated and replaced by plants from other countries. The incapacity of archaic insular forms to compete with the dominant races developed in the great continents is supposed to obtain equally in a portion of one of these ancient continental areas; and thus, the extensive development of certain useful or ornamental cultivated plants in Southern Europe is mistaken for the substitution of a new flora of a totally distinct type. That this is his belief is shown by the following passage:—

"Almost everything that strikes the northern traveller on crossing the Alps as novel and agreeable—the quiet plastic beauty of the vegetation, the characteristic forms of the landscape and animals, nay even the geological structure (in so far as it has become exposed by changes in its organic covering, and has then felt the effects of light and atmospheric agencies)—is a product of civilisation brought about by manifest transformations during long periods of time."

Notwithstanding a few blemishes such as those now indicated, the student of philology and of the early history of domesticated animals and cultivated plants will find this volume full of curious information; while there is so much discursive matter touching upon the primitive history of nations, their manners and customs, their arts and literature, and even their religion and philosophy, that the book will be interesting to a wide circle of general readers.

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EUROPEAN BUTTERFLIES

European Butterflies. By W. F. de Vismes Kane, M.A., M.R.I.A., Memb. Ent. Soc. Lond., &c. 8vo. Pp. i-xxxii, and 1-184, with plates. (London: Macmillan and Co. 1885.)

IT has long been a standing reproach to British entomologists that they are mainly divided into two classes, those who collect or study British insects only, and those who, with little knowledge of the productions of their own country, are profound regarding exotics. In other words, continental Europe is a blank to the majority of them. And the purely "British" entomologist, as a rule, is supposed to look upon anything continental as unclean; yet nevertheless prizes any unusual species if captured on our shores, and uses every argument to prove that it may possibly be a true native, and not an immigrant, for if the latter there must be a certain taint attached to it. The "purely British" entomologist is also supposed to endeavour to maintain his conservative ideas by refusing to enter into correspondence and interchange with his continental brethren, because everything not British is unclean. He retains a peculiar method in the preparation of his materials that renders them not only practically useless for purposes of study, but prevents them from being serviceable if by any chance they should fall into the hands of "foreigners." The writer has often